PPI
Power in the Public Interest

November 7, 2007

ELECTRICITY PRICE TRENDS IN DEREGULATED vs REGULATED STATES

based on EIA data through July 2007

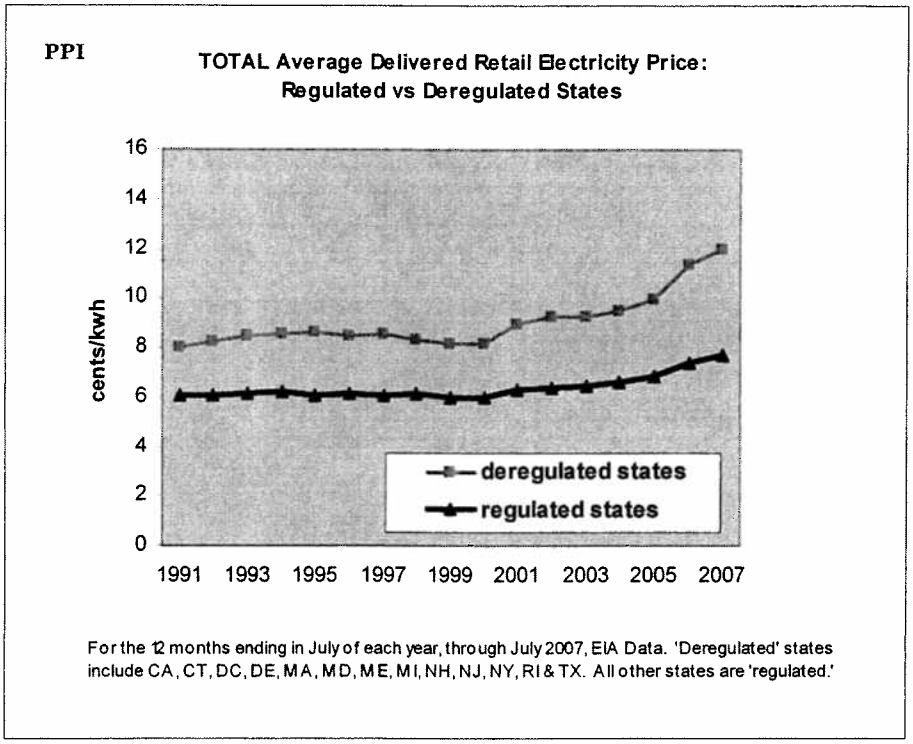
by Marilyn Showalter
marilyn.showalter@ppinet.org

The gap in retail electricity prices between deregulated[1] and regulated states continues to widen for all classes of customers. Since 1999, the difference has more than doubled, from around 2 cents/kwh in 1999 to more than 4 cents/kwh in 2007.

Currently, twelve states (California, Connecticut, Delaware, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Rhode Island, and Texas) and the District of Columbia subject significant portions of their population or load to market prices.[2] *All* of these jurisdictions *also* participate in organized wholesale markets, designed and operated by regional transmission organizations (RTOs) or a similar entity.

Figure 1 shows retail prices in the deregulated group, compared to prices in the rest of the states, which have regulated rates (including price caps and credits). Prices are for the twelve months ending in July of each year, through July 2007. They are for total average delivered cost (generation, transmission, distribution) to *all* customers in a state (residential, commercial, and industrial).

Figure 1



[1] The term "deregulated" as used in this paper, and as commonly used elsewhere, means *price*-deregulated, i.e., prices are set by a market, not directly by a regulator. The market rules themselves, however, are regulations, and in this sense all electricity systems are "regulated."

[2] In addition, *industrial* prices in Montana have largely been price-deregulated from 1999 until enactment of very recent re-regulation legislation. For the time period analyzed in this paper, Montana is considered "deregulated" for *industrial customers only* but "regulated" for "total" (all) customers. For more on categorization of the states, see Appendix B, "Notes." Note also: an inadvertent omission of NY from the text of this paragraph has been corrected.

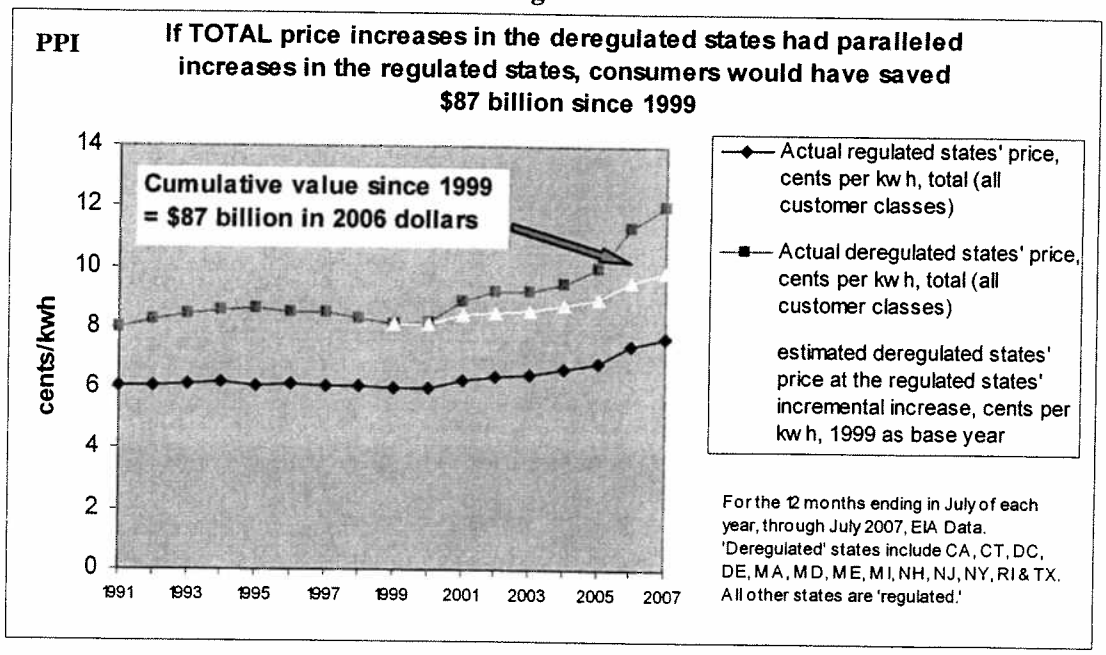
The comparative economic disadvantage to consumers in the deregulated states is enormous. Of course, as Figure 1 also demonstrates, collectively these states *began* with higher prices, which is one reason they were motivated to experiment with deregulation in the first place. (Two exceptions, Maryland and Texas, began with modest rates, and have experienced immodest increases.)

In 1999, consumers in the now-deregulated states paid $26 billion more (in 2006 dollars) for electricity than they would have paid, had they had been able to purchase their power at the average rate of the regulated states. *Today,* however, consumers in the deregulated states pay almost *$48* billion more for their power (in 2006 dollars) than they would pay if they were able to enjoy the average rate of the regulated states. The seven-year cumulative value of the gap in prices between regulated and deregulated states, invested at a real return of 5%, is $337 billion in 2006 dollars.

This is not to say that deregulation is entirely responsible for the whole gap, or that the gap can be closed. The gap *does*, however, reveal the significant economic disadvantage suffered by customers in the price-deregulated states, and the imperative for their states and regions—whatever their resource mix—to pursue the most effective form of economic regulation of electricity.

For example, Figure 2 shows a hypothetical yellow line of the average price in the deregulated states since 1999, *if* prices had simply stayed parallel to (but above) the average price in the regulated states—roughly similar to historical trends prior to 1999. In that hypothetical case, cumulatively since 1999, compared to what they actually paid, consumers in the deregulated states today would have an additional $87 billion in 2006 dollars ($97 billion if invested with a real return of 5%) to spend on other things—on their families, their businesses, or new electricity facilities.

Figure 2



Again, one cannot say that prices would have followed this exact price-path had those states not deregulated. Exact prices might have been higher or lower, depending on a number of factors, including growth, density, resource mix, and effective regulators.

The hypothetical yellow line *does*, however, provide a conceptual benchmark for examining why deregulated prices have risen above it. A fair place to start would be the wholesale market designs employed by the regional transmission organizations. By design, the most expensive needed resource, often a natural gas plant, sets the price for *all* needed resources, regardless of their underlying cost. So if the price of natural gas increases, as it has, or if an even more expensive renewable resource becomes the marginal resource, prices for *all* resources will increase as a result. By contrast, in regulated cost-based systems, a higher-cost resource will not significantly affect the amount consumers must pay for a lower-cost resource.

Customer Classes. Price differentials for each customer class followed similar patterns:

Figure 3 – Residential Customers

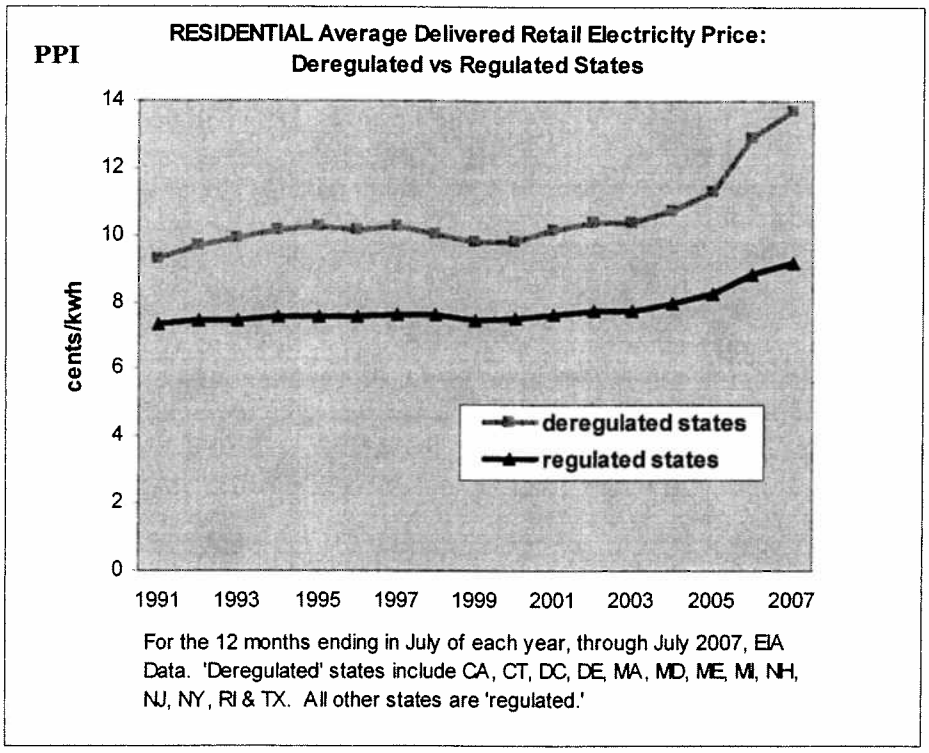
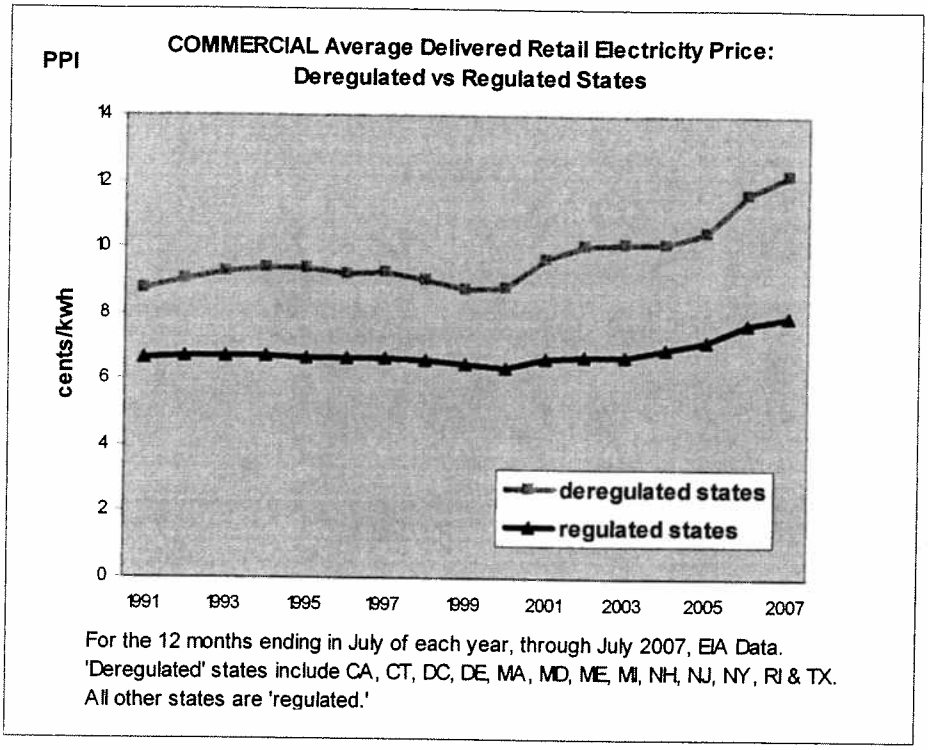
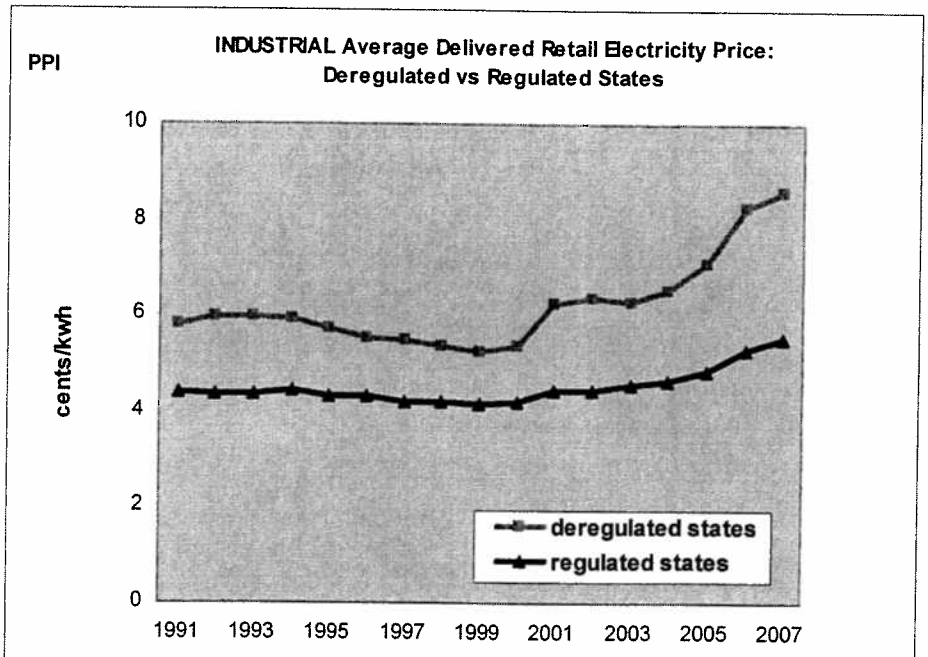


Figure 4 – Commercial Customers



For the 12 months ending in July of each year, through July 2007, EIA Data. 'Deregulated' states include CA, CT, DC, DE, MA, MD, ME, MI, NH, NJ, NY, RI & TX. All other states are 'regulated.'

Figure 5 – Industrial Customers



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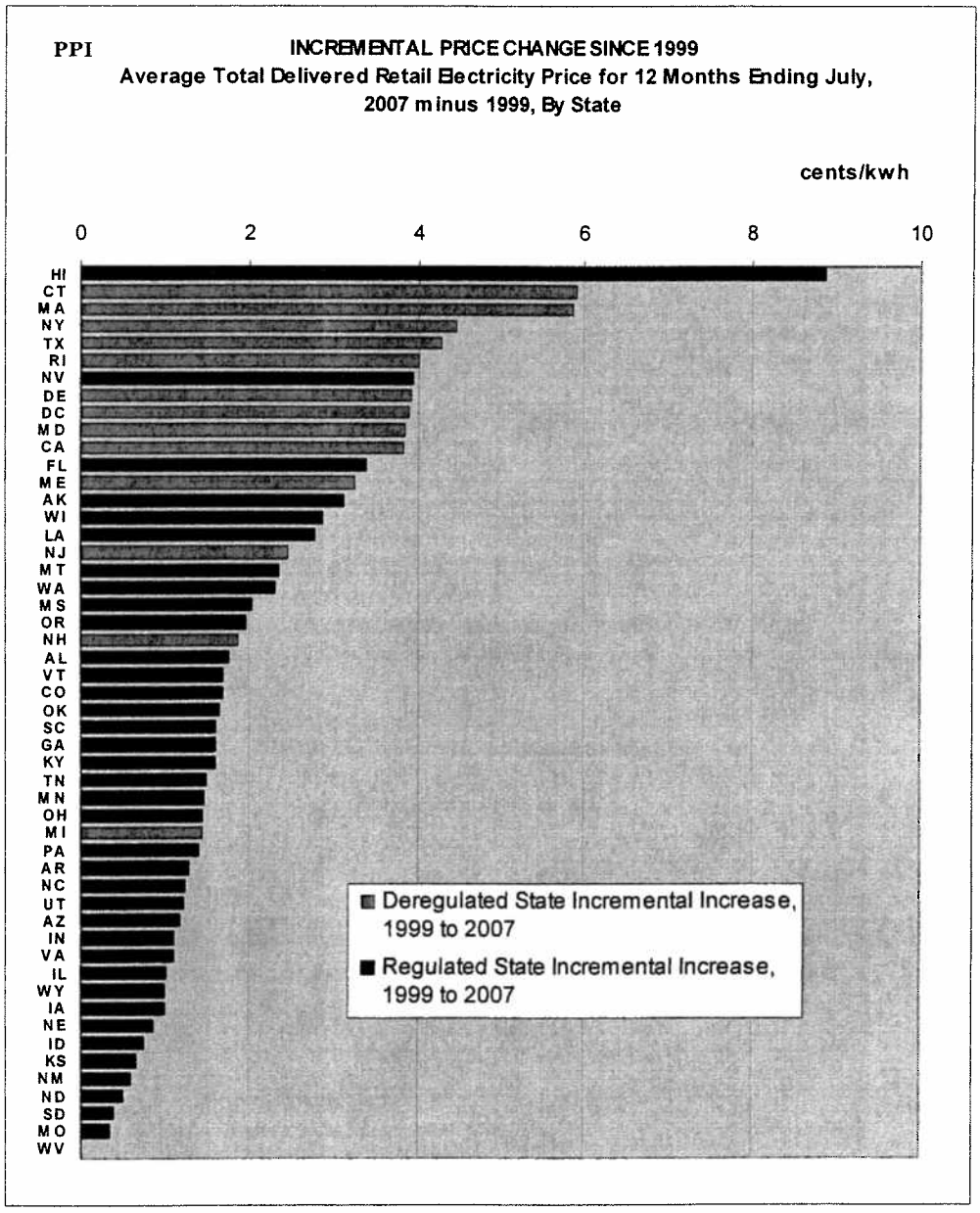
As Figure 6 shows, since 1999 prices in Connecticut and Massachusetts have increased the most of all the states except for Hawaii. Of the top ten states, all except Hawaii and Nevada are deregulated states (and Nevada took some steps, later reversed, toward deregulation).

Figure 6

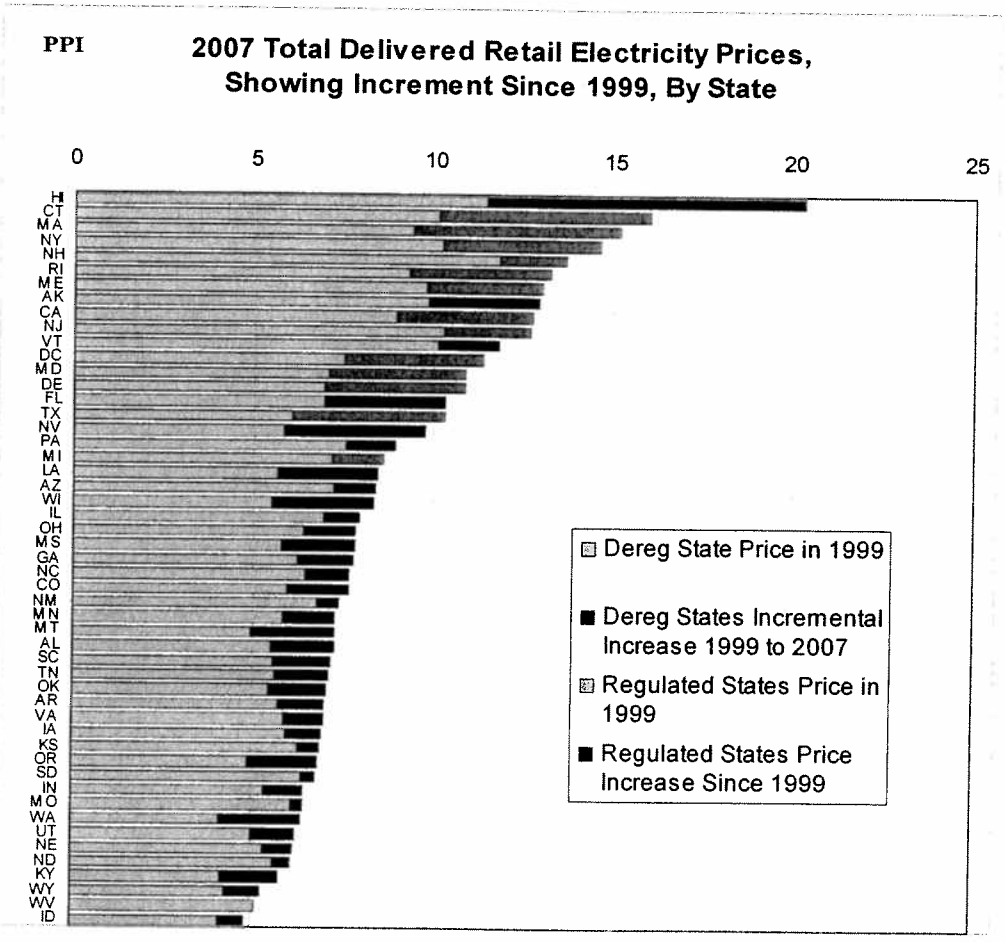


For the 12 months ending in June of each year, through July 2007, EIA Data. Regulated states include all states except CA, CT, DC, DE, MA, MD, ME, MI, NH, NJ, NY, RI, & TX.

Challenges By Market Enthusiasts. *Choice of States.* Restructuring enthusiasts try to discount the reality of these high prices in a number of ways. They fault the selection of states shown as "deregulated" and argue that the "restructured" states of Illinois, Ohio, Pennsylvania and Virginia should be included with the deregulated group. But with the exception of a few months in Illinois and a small corner of Pennsylvania, retail prices in these states have been constrained by price caps. Retail prices under price caps do not reflect market prices.

Inapt Percentage Comparisons. Deregulation enthusiasts argue that deregulated and regulated states have experienced comparable *percentage* increases in rates. They would argue that the price increase in Idaho (at the very bottom in Figure 7) is "the same" as the price increase in New Hampshire (fifth from the top) because both experienced about a 16-18% increase since 1999. But no consumer would agree that New Hampshire's increase from 11.8 to 13.7 c/kwh is "the same" as Idaho's increase from 4 to 4.8 c/kwh—the cheapest rates in the country.

Figure 7



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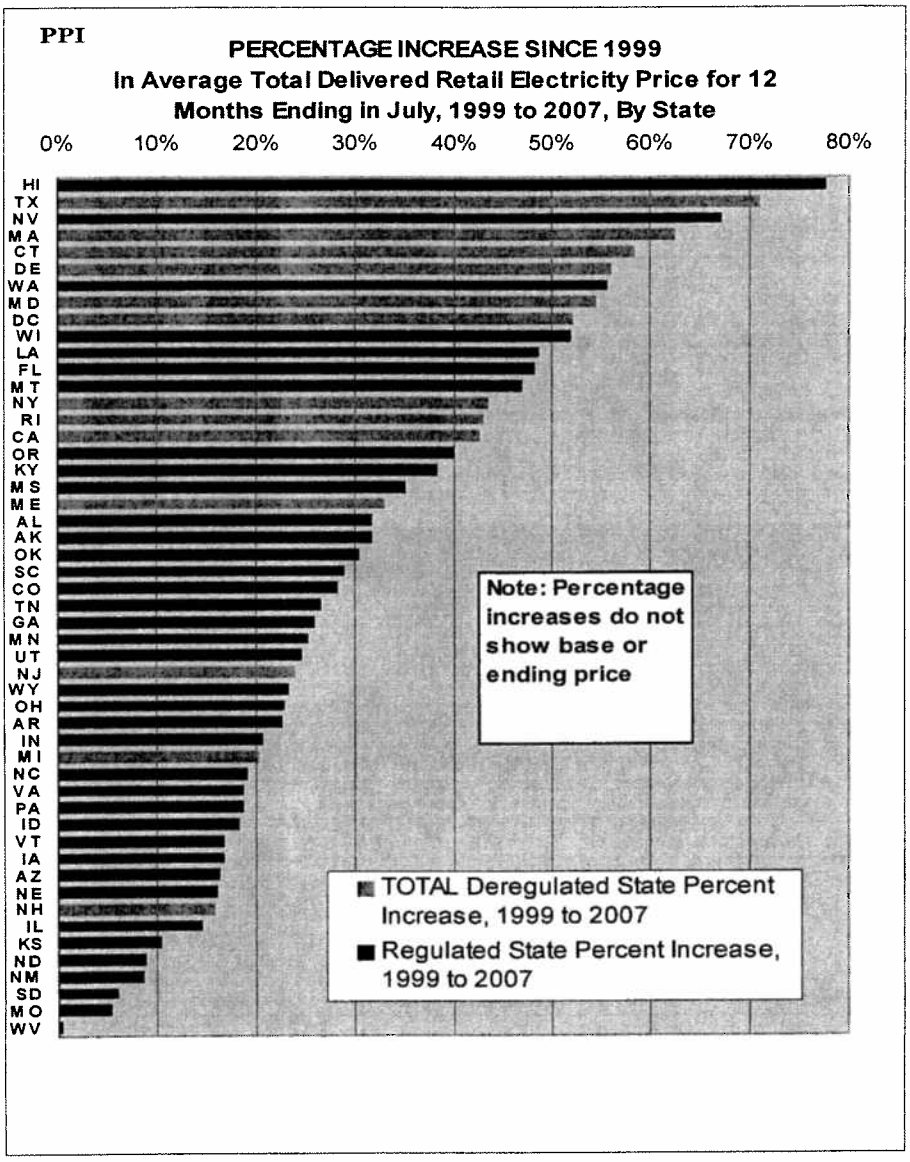
In any event, deregulated states will not be comforted by the data on percentage increases, shown in Figure 8.

Figure 8



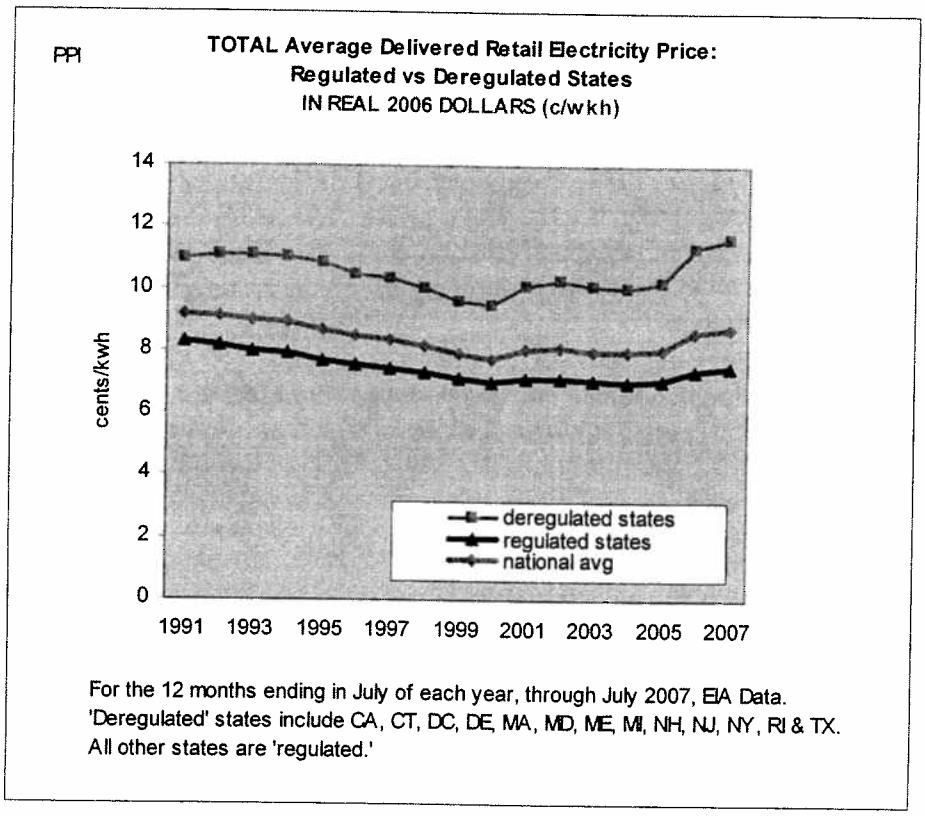
For the 12 months ending in June of each year, through July 2007, EIA Data. Regulated states include all states except CA, CT, DC, DE, MA, MD, ME, MI, NH, NJ, NY, RI, & TX.

Real Dollars and National Averages. Some brag that deregulated prices have "beat inflation" and declined in real terms, usually by limiting the analysis to a short period of time, or going back to a pre-deregulation period in which all electricity prices were declining in real terms. Others boast that a particular deregulated state has improved its prices when measured as a

percent of the national average, ignoring the fact that the deregulated states have driven the average up.

In fact, however, as Figure 9 shows, prices in the collective deregulated states have increased in real dollars, increased as a percent of the national average, and increased as a percent of the price in regulated states. Since 1999, prices for customers in deregulated states have gone from 22% above to 33% above the national average, while prices for customers in regulated states have gone from 10% below to 15% below the national average. So the *spread* between the two prices has increased from 22 to 48 percentage points. Comparing the two groups directly to each other, since 1999, deregulated prices have gone from 36% higher to 56% higher than regulated prices.

Figure 9 – Real 2006 Dollars



Lifting of Price Caps. Some advocates try to explain the high prices as pent up pressure that is released when price caps are removed. While this is possible, it only means that if this pressure had been absorbed along the way instead of being pent up under a price cap, deregulated prices in the last few years would have been even higher (sooner), and the comparative disadvantage in purchasing power in those years would have been even greater between deregulated and regulated states. Further, price caps in most states that have lifted them have now been off for some time, especially for industrial customers.

Natural Gas Prices. Some claim that the higher prices in deregulated states are simply the unfortunate effect of increased natural gas prices, a claim that has been effectively rebutted.[3] Actually the prices are largely a reflection of market design. As discussed earlier, the wholesale market designs that drive retail prices in the deregulated states allow the highest bid among needed suppliers, often a bid from a natural gas plant, to set the price for all needed resources, regardless of their underlying costs. As a result many lower-cost plants are collecting, and consumers are paying, enormous profits (also called "infra-marginal returns," and economic term, or "the dark spread," a pun on another energy term, "spark spread").

Finally, some market enthusiasts say "just wait": prices will cycle down, improvements will be made, and consumers will ultimately benefit. Setting aside the inequity and hardship on today's consumers while waiting for this scenario to develop, the more likely scenario for the foreseeable future is one of increasing marginal prices, as tighter worldwide fuel supplies and mandates for renewable resources drive up the marginal bids and therefore drive up prices for all resources.

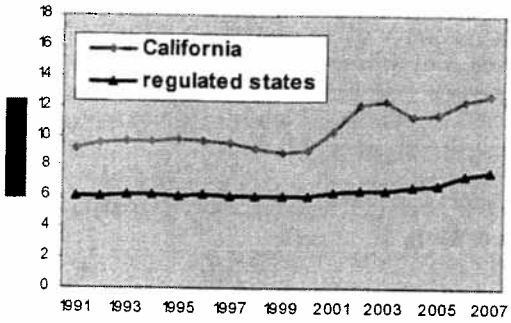
Conclusion: Because it is difficult to "prove the counter-factual" (what the deregulated states would have experienced had they never deregulated), it is difficult to say with quantitative precision by how much deregulation has driven up prices. However, the evidence is strong and mounting that the combination of retail deregulation at the state level and marginal pricing at the wholesale level is driving retail prices to consumers well above underlying costs. This evidence is both empirical and theoretical.

Marilyn Showalter is Executive Director of Power in the Public Interest, which supports policies that promote publicly accountable and durable electricity systems that provide reliable and affordable service. Contact marilyn.showalter@ppinet.org for more information.

[3] Kenneth Rose, "The Impact of Fuel Costs on Electric Power Prices," June 2007, http://www.appanet.org/files/PDFs/ImpactofFuelCostsonElectricPowerPrices.pdf

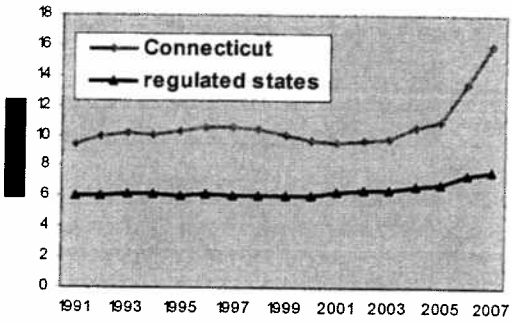
APPENDIX A: TOTAL PRICES, SELECTED STATES

TOTAL Average Delivered Retail Electricity Price: California vs Regulated States



For the 12 months ending in July of each year, through July 2007, EIA Data. 'Deregulated' states include CA, CT, DC, DE, MA, MD, ME, MI, NH, NJ, NY, RI & TX. All other states are 'regulated.'

TOTAL Average Delivered Retail Electricity Price: Connecticut vs Regulated States



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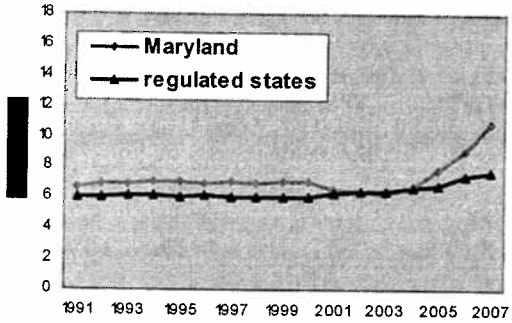
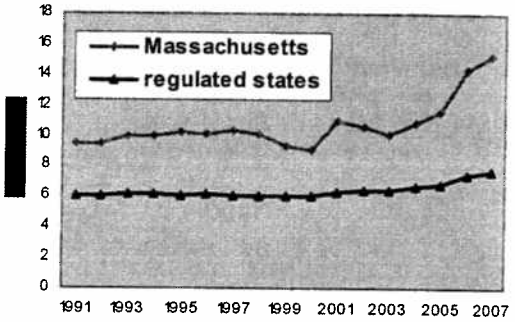
TOTAL Average Delivered Retail Electricity Price: Maryland vs Regulated States



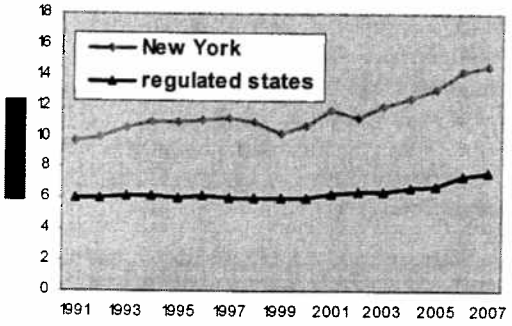
For the 12 months ending in July of each year, through July 2007, EIA Data. 'Deregulated' states include CA, CT, DC, DE, MA, MD, ME, MI, NH, NJ, NY, RI & TX. All other states are 'regulated.'

TOTAL Average Delivered Retail Electricity Price: Massachusetts vs Regulated States



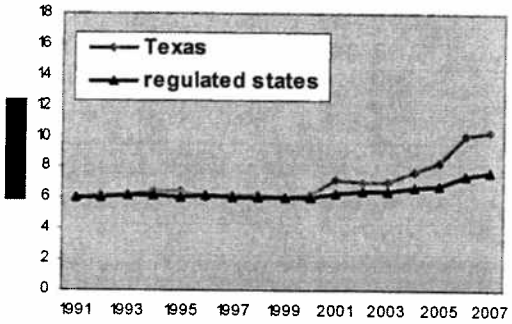
For the 12 months ending in July of each year, through July 2007, EIA Data. 'Deregulated' states include CA, CT, DC, DE, MA, MD, ME, MI, NH, NJ, NY, RI & TX. All other states are 'regulated.'

TOTAL Average Delivered Retail Electricity Price: New York vs Regulated States



For the 12 months ending in July of each year, through July 2007, EIA Data. 'Deregulated' states include CA, CT, DC, DE, MA, MD, ME, MI, NH, NJ, NY, RI & TX. All other states are 'regulated.'

TOTAL Average Delivered Retail Electricity Price: Texas vs Regulated States



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APPENDIX B: EXPLANATORY NOTES

For purposes of the analyses and graphs in this article:

a. The source of data is EIA 826 Sales and Revenue Spreadsheet. This spreadsheet reflects information derived from both Form 826 and Form 861. For a fuller and recent explanation of the Sales and Revenue Spreadsheet, see "Supporting Statement for the Electric Power Surveys, OMB Number 1905-0129," pp 46-49. http://www.eia.doe.gov/cneaf/electricity/page/fednotice/supportstatment.pdf

b. The prices are averages for the 12 months ending in July of each year, 1991 through 2007. (A rolling 12-month average captures all seasons and can be updated each month.)

c. The prices shown are for total delivered price (generation, transmission, and distribution) for all customers in a state, whether served by an investor-owned or public-power utility.

d. The label "deregulated" or "regulated" is applied at the state level. Prices for any given state are shown in either the "regulated" or "deregulated" line for the entire period, even though most states began deregulation around 1999 or 2000; prior to that time all states would have been classified as "regulated." Also, a "deregulated" state may include territories, notably those of public-power utilities, that have been exempted from the state's deregulation requirements.

e. When analyzing prices for *all customer classes*, the "regulated states" include all states except CA, CT, DC, DE, MA, MD, ME, MI, NH, NJ, NY, RI, TX, which comprise the "deregulated" states. Characterizing a state as "regulated" or "deregulated" involves some judgment, since different states can have different approaches to pricing for different classes of customers and to divestiture of regulatory assets. In general, states whose residential customers have retained regulated rates are defined as "regulated." (Residential customers are the largest share of any state's load.)

   i) The states of IL, OH, PA, VA are included in regulated states, due to price caps in those states through 12/06. Price caps in Illinois were removed as of January 2007, but January and some of February rates reflect prices paid under the previous month's capped rates; since the graphs show a rolling 12-month average, Illinois prices for the 12 months ending July 2007 still largely reflect capped rates; further, a credit was legislated in summer of 2007 that will blunt the effect of future market rates.

   ii) California suspended deregulation but remains in the "deregulated" category because significant regulatory assets were divested, some customers remain unregulated, and the others are largely exposed to wholesale market rates due to divestiture and California's organized wholesale market.

   iii) Montana is included in "regulated" states because it never fully exposed its residential customers to the open market, though its main utility did divest itself of its regulatory assets. Arguably, Montana should be included in the "deregulated" category, at least for a period of years, but doing so would not significantly change the graphs, because it is a small-population state. *In graphs and tables that reflect industrial prices only, Montana is considered "deregulated."* Montana's recent "re-regulation" law does not significantly affect prices in the time period studies in this paper.

   iv) New Hampshire, another small state, is characterized as "deregulated," even though some regulatory assets were preserved for residential customers for a period of time.

For short summaries of restructuring developments in each state, see
http://www.appanet.org/aboutpublic/index.cfm?ItemNumber=9611&sn.ItemNumber=2102